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Olmos Dam gets upgrade - San Antonio Express-News

By John W. Gonzalez

Solid since the 1920s, the keystone of downtown flood prevention is being bolstered with $4 million in county funds.

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Before Olmos Dam was completed 82 years ago, flood after flood inundated downtown San Antonio.

The city finally was spurred into action when an 18-inch rain in September 1921 left most of the business district submerged and drowned about 50 residents.

The prescribed remedy was a vertical wall of concrete with decorative arches, topped with a road that let motorists cruise between Olmos Park and Alamo Heights over scenic but boggy Olmos Basin.

Completed in 1928, the dam proved to be one of the city's most enduring public works, a landmark that helped tame the San Antonio River and made feasible the River Walk concept.

Now Olmos Dam needs a little work — about $4 million worth.

In a project funded by Bexar County taxpayers, construction has begun to strengthen its bond with bedrock and improve the spillway.

County Judge Nelson Wolff and other dignitaries will visit the dam today to call attention to the project, funded with flood-control bonds approved by Bexar County voters in 2007.

It's the city-owned dam's first significant upgrade in more than 30 years, and the first time the county has directed a concrete dam

construction project, flood control manager Art Villarreal said.

After months of engineering studies, workers are drilling top-to-bottom holes through the dam into the bedrock to install 68 cable tendons that will be tightened and sealed into place, construction manager Ted Nelson said.

He said the work is needed because the dam is impounding more floodwaters than ever due to increased runoff from North Side growth areas.

“The dam has not outlived its design. It's got more water retention now because of development, because San Antonio grew,” Nelson said. “When we had rain in September, there was 28 feet of water behind the dam — and that was not a big rainstorm,” he said.

The concrete structure, nearly 2,000 feet long, is 58 feet high in places, including about 20 feet below ground. The dam stands in the path of waters that naturally merge with the headwaters of the San Antonio River at the University of the Incarnate Word. Floodwaters retained by the dam fill the basin rather than swamp downtown.

The central city has several other flood protections in place, including a mammoth underground structure that diverts river water away from downtown.

Still, Olmos Dam is considered crucial, and it's holding up well.

Experts rate it as structurally sound and in no danger of failing in a 100-year flood, but they want to ensure it performs well in even bigger flood events. Rather than add more costly concrete, which was the only other option, the county chose to install the cable tendons.

During major storm episodes, the gatehouse over the spillway serves as the nerve center for storm-water operations.

“This is their rally point because this is the crown jewel of flooding control for San Antonio,” Nelson said.

The dam got a thorough study in 1974, which resulted in the last big round of strengthening upgrades, which were done by the U.S. Army Corps of Engineers. By 1981, the dam had a new look: the narrow road atop the dam was closed and replaced with a domed concrete cap.

Also, a concrete slope was added to the dam's downstream side to reduce structural damage if water ever topped the dam. That hasn't happened yet, but it almost did in the historic flooding of 1998, and the dam was put to the test again in 2002 flooding.

For all the wear and tear, the dam looks a bit weathered and dingy now, but Nelson said the concrete poured decades ago still is solid and getting even harder with time. Only a glimpse remains of the dam's stylish original profile: over the spillway, a few symbolic arches were preserved.

And it won't look any different when work is completed in July 2011. The structure isn't getting any cosmetic improvements.